

*CofC*

PTO/SB/21 (09-06)

Approved for use through 03/31/2007. OMB 0651-0031  
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## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/604,264
Filing Date	07/07/2003
First Named Inventor	Bao-Chi Peng
Art Unit	2611
Examiner Name	KIM, KEVIN

8 Attorney Docket Number

ACMP0081USA

### ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____  <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):  1. A copy of the Front Page of Patent 2. A copy of Fee Transmittal 3. Copies of the Notice of Recordation
<b>Remarks</b>  Request for Certificate of Correction of Office Mistake		

*JAN 03 2007*

### Certificate

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	North America Intellectual Property Corporation		
Signature	<i>Winston Hsu</i>		
Printed name	Winston Hsu		
Date	JAN 03 2007	Reg. No.	41,526

### CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	<i>Brenda Lin</i>		
Typed or printed name	Brenda Lin	Date	JAN 03 2007

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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*JAN 1 - 9 2007*



PTO/SB/17 (07-06)

Approved for use through 01/31/2007. OMB 0651-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

# FEE TRANSMITTAL For FY 2005

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	(\$)	0.00
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Complete if Known	
Application Number	10/604,264
Filing Date	07/07/2003
First Named Inventor	Bao-Chi Peng
Examiner Name	KIM, KEVIN
Art Unit	2611
Attorney Docket No.	ACMP0081USA

## METHOD OF PAYMENT (check all that apply)

Check  Credit Card  Money Order  None  Other (please identify): \_\_\_\_\_

Deposit Account Deposit Account Number: 50-3105 Deposit Account Name North America Intellectual Property Corporation

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Charge fee(s) indicated below  | <input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee |
| <input checked="" type="checkbox"/> Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 | <input checked="" type="checkbox"/> Credit any overpayments                       |

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

## FEE CALCULATION

## 1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Small Entity	Fee (\$)	Small Entity	Fee (\$)	Small Entity	Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

## 2. EXCESS CLAIM FEES

Fee Description

Each claim over 20 (including Reissues) Fee (\$) Small Entity Fee (\$)

Each independent claim over 3 (including Reissues) Fee (\$) Small Entity Fee (\$)

Multiple dependent claims Fee (\$) Small Entity Fee (\$)

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- 20 or HP =	x	=				

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- 3 or HP =	x	=				

HP = highest number of independent claims paid for, if greater than 3.

## 3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	/ 50	(round up to a whole number) x	=	

## 4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount) Fees Paid (\$)

Other (e.g., late filing surcharge): \_\_\_\_\_

## SUBMITTED BY

Signature	<i>Winston Hsu</i>	Registration No. (Attorney/Agent) 41,526	Telephone 3027291562
Name (Print/Type)	Winston Hsu		Date JAN 03 2007

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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JAN - 9 2007

PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor : Bao-Chi Peng

Examiner: KIM, KEVIN Art Unit: 2611

Patent No. : US 7,145,970 B2 Issue Date: Dec. 5, 2006

Docket No. : ACMP0081USA

Title: Frequency Offset Detector for AFC under Rayleigh  
Fading

To: Commissioner for Patents  
P.O. BOX 1450  
Alexandria, VA 22313-1450

Subject: Request for Certificate of Correction of Office Mistake

The name of the assignee listed on the front page of the Patent is incorrect (Attachment 1). Documents on record indicate this as an Office mistake of consequence.

The applicant hereby requests that a Certificate of Correction be issued under 37 CFR 1.322 to correct the name of the assignee from "**Beno Corporation**" to "**BenQ Corporation**" which was correctly listed on the Fee Transmittal submitted on 10/19/2006 (Attachment 2) and the Notice of Recordation of assignment document dated 07/08/2003 (Attachment 3).

JAN - 9 2007

Sincerely yours,

Winston Hsu

Date: JAN 03 2007

Winston Hsu, Patent Agent No. 41,526  
P.O. BOX 506, Merrifield, VA 22116, U.S.A.  
Voice Mail: 302-729-1562  
Facsimile: 806-498-6673  
e-mail : [winstonhsu@naipo.com](mailto:winstonhsu@naipo.com)

Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)

JAN - 9 2007

Attachment 1

Please correct the name of the assignee from "Beno Corporation" to "BenQ Corporation".



US007145970B2

(12) **United States Patent**  
Peng

(10) Patent No.: **US 7,145,970 B2**  
(45) Date of Patent: **Dec. 5, 2006**

(54) **FREQUENCY OFFSET DETECTOR FOR AFC UNDER RAYLEIGH FADING**

6,097,770 A \* 8/2000 Bahai et al. .... 375/343

(75) Inventor: **Bao-Chi Peng, Hsin-Chu (TW)**

\* cited by examiner

(73) Assignee: **Beno Corporation, Tao-Yuan Hsien (TW)**

Primary Examiner—Kevin Kim

(74) Attorney, Agent, or Firm—Winston Hsu

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 729 days.

(57) **ABSTRACT**

(21) Appl. No.: **10/604,264**

A frequency offset detector for AFC under Rayleigh fading. The AFC includes a variable phase generator, an exponential term  $e^{j\Delta t_0}$  multiplied on an incoming signal, a low-pass filter, a gain amplifier, a multiplier, and an offset detector. The offset detector includes a filter, an amplifier, a delay block, three adders, and two blocks that output the absolute value of an inputted signal. The filter is a Finite Impulse Response (FIR) filter that produces a Hilbert Transformation of the inputted complex gain. The Hilbert FIR filter, together with the complex gain and two of the adders, generate two complex signals:  $X_p$  and  $X_n$  respectively representing the positive and negative frequency components of the inputted complex gain. The detector output is equal to the difference between the magnitudes of  $X_p$  and  $X_n$ .

(22) Filed: **Jul. 7, 2003**

(65) **Prior Publication Data**

US 2005/0008108 A1 Jan. 13, 2005

(51) **Int. Cl.**

**H04L 27/06** (2006.01)

(52) **U.S. Cl.** .... 375/344; 455/164.1; 455/192.2

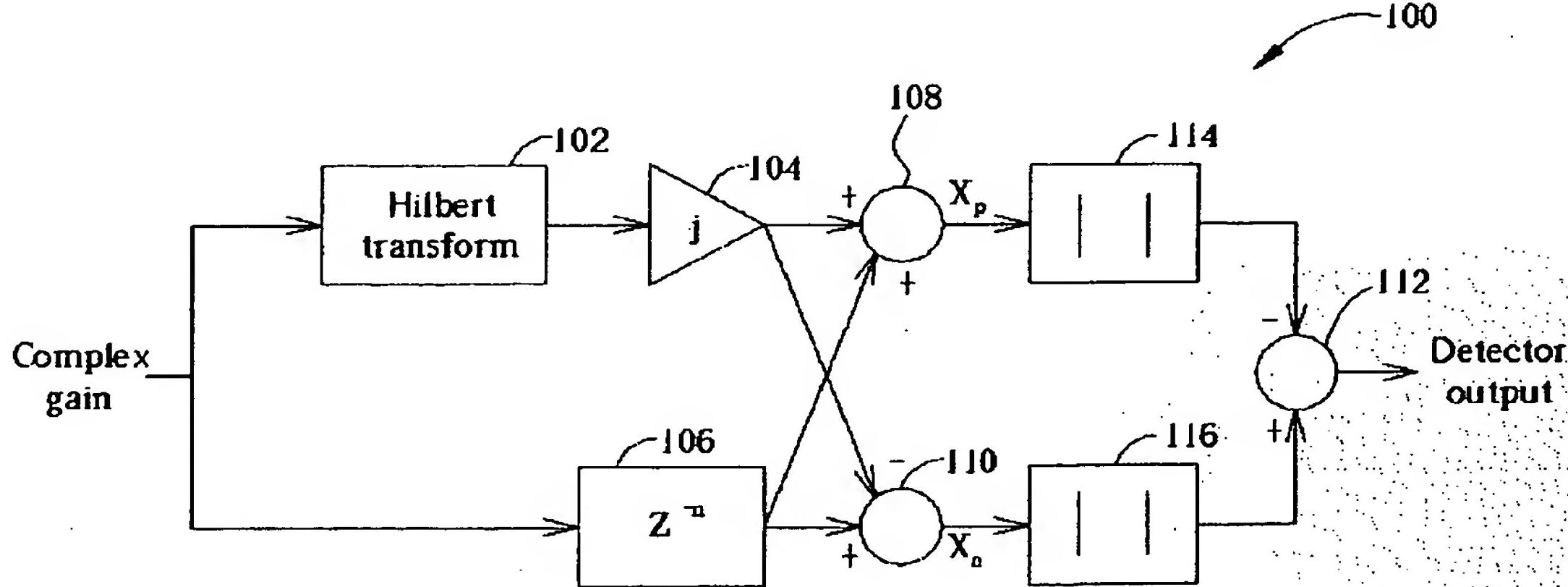
(58) **Field of Classification Search** .... 375/344  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,802,117 A \* 9/1998 Ghosh .... 375/344

**14 Claims, 10 Drawing Sheets**



JAN - 9 2007

## Attachment 2

### PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

027765 7590 09/06/2006  
**NORTH AMERICA INTELLECTUAL PROPERTY**  
**CORPORATION**  
**P.O.BOX 506**  
**MERRIFIELD, VA 22116**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**  
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Brenda Lin	(Depositor's name)
<i>Brenda Lin</i>	(Signature)
10/19/2006	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,264	07/07/2003	Bao-Chi Peng	ACMP0081USA	1263

**TITLE OF INVENTION:** Frequency Offset Detector for AFC under Rayleigh Fading

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	12/06/2006
EXAMINER	ART UNIT	CLASS-SUBCLASS				
KIM, KEVIN	2611	375-344000				

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 *Winston Hsu*

2 \_\_\_\_\_  
3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

BenQ Corporation

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

No. 157, Shan-Ying Road, Gueishan, Tao-Yuan Hsien, Taiwan,  
R.O.C.

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are submitted:

- Issue Fee  
 Publication Fee (No small entity discount permitted)  
 Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- A check is enclosed.  
 Payment by credit card. Form PTO-2038 is attached.  
 The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-3105 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

*Winston Hsu*

Date 10/19/2006

Typed or printed name \_\_\_\_\_

Winston Hsu

Registration No. 41,526

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Attachment 3



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Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

JULY 08, 2003

NAIPO (NORTH AMERICA INTERNATI  
P.O. BOX 506  
MERRIFIELD, VA 22116



\*800007123A\*



939229

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF  
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REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE  
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PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD  
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CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723.  
PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE,  
ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY,  
SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 07/07/2003

REEL/FRAME: 013777/0977

NUMBER OF PAGES: 2

BRIEF: ASSIGNMENT OF ASSIGNEE'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNEE:

BENQ CORPORATION

NO.157, SHAN-YING ROAD, KWEISHAN  
TAO-YUAN HSIEN, TAIWAN

DOC DATE: 06/10/2003

SERIAL NUMBER: 10604264  
PATENT NUMBER:

FILING DATE:  
ISSUE DATE:

STEVEN POST, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

JAN - 9 2004

## PATENT ASSIGNMENT

Electronic Version v07  
Stylesheet Version v02

07/07/2003  
800007123

SUBMISSION TYPE:	NEW ASSIGNMENT	APPLICATION NUMBER 10/604264			
NATURE OF CONVEYANCE:	ASSIGNMENT OF ASSIGNOR'S INTEREST				
CONVEYING PARTY DATA					
Name Bao-Chi Peng	Execution Date 2003-06-10				
RECEIVING PARTY DATA					
Name BenQ Corporation	Street Address No.157, Shan-Ying Road, Kweishan	Internal Address	City Tao-Yuan Hsien	State/Country TAIWAN	Postal Code
CORRESPONDENCE DATA					
FAX NUMBER: 886229295950 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> When the customer number has been provided, the Office of Public Records will obtain the correspondence data from the official record on file at the USPTO.					
CUSTOMER NUMBER: 027765					
NAME OF PERSON SIGNING:	WINSTON HSU				
DATE SIGNED:	2003-07-08				
Total Attachments: 1 source=ACMP0081ASS1.tif					

CH \$40.00 500801 10604264

JAN 9 2007